

List of few new instruments, practical and techniques introduced

A number of practicals were introduced in this year with the help of the equipments purchased through STAR scheme. These were a part of the syllabus but were not conducted due to lack of fund to buy the necessary equipment. Therefore these practicals were either explained theoretically or videos were shown to make the students understand the concept.

ZOOLOGY

Electrophoretic apparatus
Digital blood pressure meter
Stereo microscope
Laminar flow and Incubator

- Demonstration of electrophoresis
- Blood pressure determination
- Observation of live microscopic organisms
- Preparation of culture media and culture of microbes



CHEMISTRY

Icmatic
Microwave oven
Demineralizer
Semi micro glasswares
Water Analyser

- Physical, Organic and Inorganic practicals
- Green synthesis
- Preparation of DI water
- Semi micro analysis
- Estimation of dissolved O₂ and pH



PHYSICS

Polarimeter
Newtons rings apparatus
CRO and Function generator
G M Counter
B H Curve apparatus

- Determination of specific rotation of sugar solution
- Determination of wavelength of sodium light
- Determination of the resonance condition in LCR series circuit
- Demonstration of linear attenuation coefficient and half value thickness using GM Counter
- Demonstration of B-H Curve using standard toroid specimen



Projects undertaken by students

The students of the undergraduate courses were greatly benefited as they were complete new projects with instruments obtained through the STAR scheme

ZOOLOGY

- Study of adulterants in different types of milk
- Occurrence of double parasitism in half beaked fish
- Comparative study on dragonfly diversity before and after the flood on 15th August 2018, Kerala, South India.

CHEMISTRY

- Synthesis of biodiesel from deep fried waste cooking oil
- Synthesis of polyaniline nanofibers and corrosion studies of steel using polystyrene bends
- Microwave assisted synthesis of silver nanoparticles and photocatalytic degradation studies of different fertilizers

PHYSICS

- Studies on the efficiencies of solar cells
- Determination of Band Gap Energy and temperature sensitivity of diodes
- Study of linear attenuation coefficient and half value thickness of various materials using G M Counter

List of few interdepartmental seminars conducted by the college in the college campus:

Date	Duration	Programme	Organizer/s	Participants	Resource Person	Designation
5 th March 2019	1 Day	Vacada Fest – Exhibition on dairy products	Department of Zoology	Students and teachers from other department of the college	Mr. Raphi,	Principal, Dairy Training Center, Alathur
3 rd Dec., 2018	3 hour (half day)	"Spectroscopy—a versatile tool"	Department of Chemistry	Chemistry and Physics	Dr. Leena R	Assistant professor, Department of chemistry, CUSAT
11 th Jan., 2019	1 day	International seminar on "Recent Trends in Nano Science"	Department of Chemistry	Chemistry, Physics and Zoology	1) Rajesh Shenoil 2) Dr. Sanal K C	1)Senior Scientist, Interuniversity Centre for Biomedical Research & Super Speciality Hospital, MG University Campus, Kottayam, Kerala 2)Professor-Investigador, Facultad de CienciasQuimicas Universidad Autonoma de Nuevo Leon, Mexico
7 th Feb., 2019	3 hour (half day)	Training on "Laboratory safety"	Department of Chemistry	Chemistry, Physics and Zoology	Mr. Siyad B (M Tech.)	Chemical Inspector, Dept. of Factories and Boilers, Kollam, Kerala
21 st Feb., 2019	3 hour (half day)	"Recent trends in Electrochemistry"	Department of Chemistry	Chemistry, Physics and Zoology	Dr. Sreekuttan M Unni	Scientist, Division of electrochemical power sources, CSIR-CECRI, Karaikudi

Faculty

Training received by faculty from participating departments:



i. Training on milk products at Dairy Training Center, Alathur – Dr. Tesey K.L., Dr. Sr. Betty K.P., Dr. V. Neetha and Ms. Neenu Joy of Department of Zoology.



ii. Laboratory safety training programme organized at Chemistry department on 7th February, 2019 attended by the teaching and non-teaching staff of various science departments. Mr. Siyad B, Chemical Inspector, Dept. of Factories and Boilers, Kollam, Kerala was the resource person.



iii. One day Glass Blowing Techniques training programme at Chemistry department, Sacred Heart College, Chalakudy on 17th January, 2019 attended by the teaching and non-teaching staff of various science departments of the college. Mr. Ramesh (CEO, Nehasi Scientific, Calicut, Kerala) was the resource person.



iv. Semi Micro Analysis training programme organized at Chemistry lab on 25th March, 2019 attended by the teaching and non-teaching staff of Chemistry departments.

Impact of DBT Support

☐ The college was highly affected during the floods of 15th August 2018 with heavy losses of all facilities. Our practical laboratories were also destroyed with complete loss of a number of laboratory equipments and instruments. It is only because of the funds available through the STAR College scheme that these laboratories were reinstalled and made functional within a short period of time. This greatly helped our students to complete their prescribed syllabus for practicals within the stipulated time.

☐ Practical skill of the students was greatly improved especially in the fields of microbiology, biotechnology and molecular biology with the use of equipments such as laminar flow, incubator and electrophoretic apparatus which were bought using DBT support. Before such a support was available students were able to learn application of these only theoretically.

☐ As a part of the syllabus, the subject of bioinformatics requires the students to use computer software and internet. To maintain computers in our laboratory we did not have a sufficient battery backup. With the help of the DBT support it is now possible for students to access bioinformatic tools on the computer.

☐ All the students get a hand on experience in using sophisticated instruments for carrying out practicals and innovative projects. This makes them more interested in the subject, as they learn not only the theory, but now know how to actually use it practically. This makes them enthusiastic to pursue higher education.

☐ DBT-star College scheme promotes interdisciplinary programmes and so the faculty is also encouraged to introduce innovative courses and as a result interdepartmental collaboration have increased.